A wet and sunny January, but very average for temperature

Description

January 2015 saw above-average amounts of sunshine and rainfall right across the UK, but with temperatures averaging out to near-normal.

The first half of the month was largely unsettled, with mild, wet and windy weather interspersed with colder and drier spells.

From mid month, the colder conditions turned more persistent, with snow in places and some extensive snowfalls across the Scottish mountains.

This change of weather type led to some large temperature variations through the month, with a high of 16.5C at Exeter Airport on the 9th and a low of -13.7C at Loch Glascarnoch on the 19th.

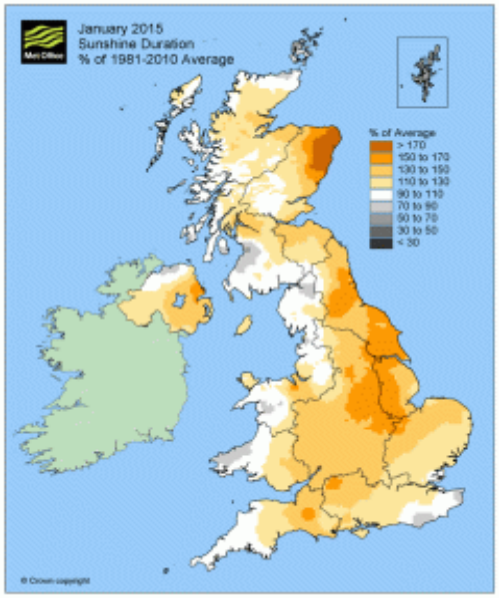
Even though Loch Glascarnoch is in the Scottish Highlands and so is prone to very low temperatures in the winter, this was the lowest temperature recorded across the UK since 2012.

Rainfall amounts were above average across the UK, especially so in Scotland where it was the 4th wettest January in the series since 1910.

Shetland was particularly wet with Lerwick recording over twice the average rainfall; it was the wettest January here in a 100-year series.

Conversely, sunshine amounts were also above average. Nottingham, Waddington and Dyce each recorded their sunniest January in over 60 years of records.

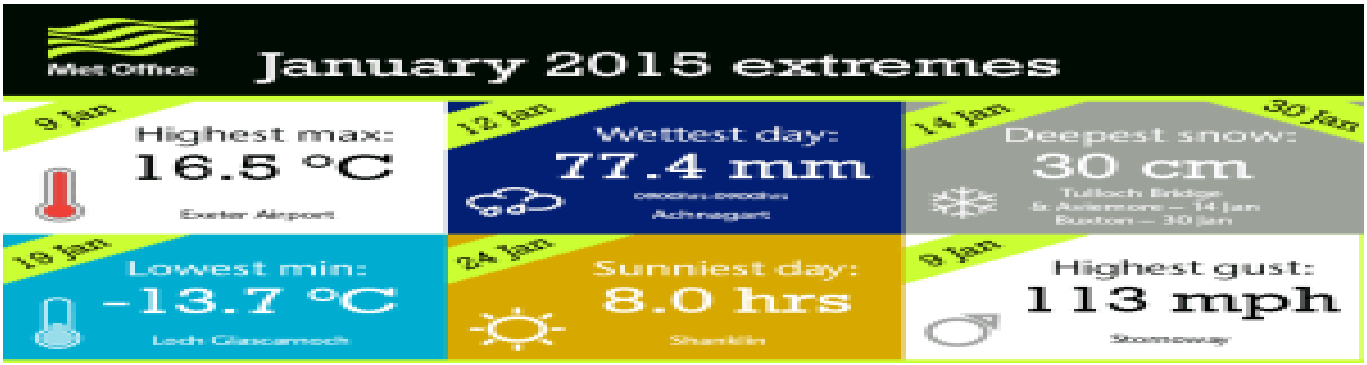
Across the UK, it was the fifth sunniest January since 1910, with 60 hours of sunshine (compared to an average of 47 hours).



January 2015 sunshine duration as a percentage of the 1981-2010 average

Despite the cold end to the month, temperatures for the month as a whole were very close to average, with a mean temperature of 3.7C across the UK (just 0.1C above the 1981-2010 average).

Here are the weather extremes that we saw across the UK throughout January 2015:



You can find out more about the weather in January 2015 on the climate pages of our website.

Date Created
February 2015

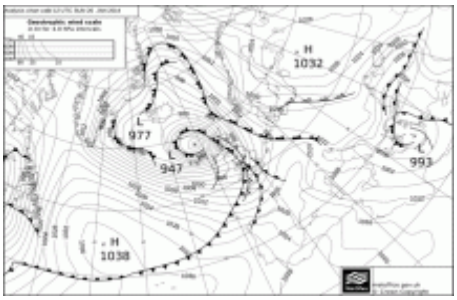
One year on – A look back to last winter

Description

This weekend marked the one-year anniversary of the Valentine's Day storm, which also marked the end of a particularly stormy three-month period. A new review article – 'From months to minutes – exploring the value of high-resolution rainfall observation and prediction during the UK winter storms of 2013/2014' – written by 16 Met Office co-authors reviews the accuracy of our forecasting and warning of severe weather during winter 2013-14, and assesses its performance.

The paper concludes that the "prolonged period of high impact weather experienced in the United Kingdom during the winter of 2013/14 was very well forecast by the operational tools available across space and time scales."

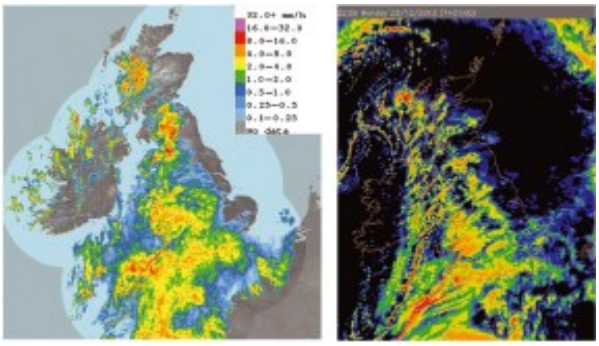
Here Huw Lewis, the paper's lead author, and Derrick Ryall, Head of the Public Weather Service, look at the extreme weather last year and the role of the Met Office in communicating severe weather through the National Severe Weather Warning Service.



Analysis chart 1200 GMT 26 January 2014

Winter 2013/2014 in the United Kingdom was remarkable. The country was battered by at least 12 major winter storms over a three month period and was officially assessed as the stormiest period that the United Kingdom has experienced for at least 20 years.

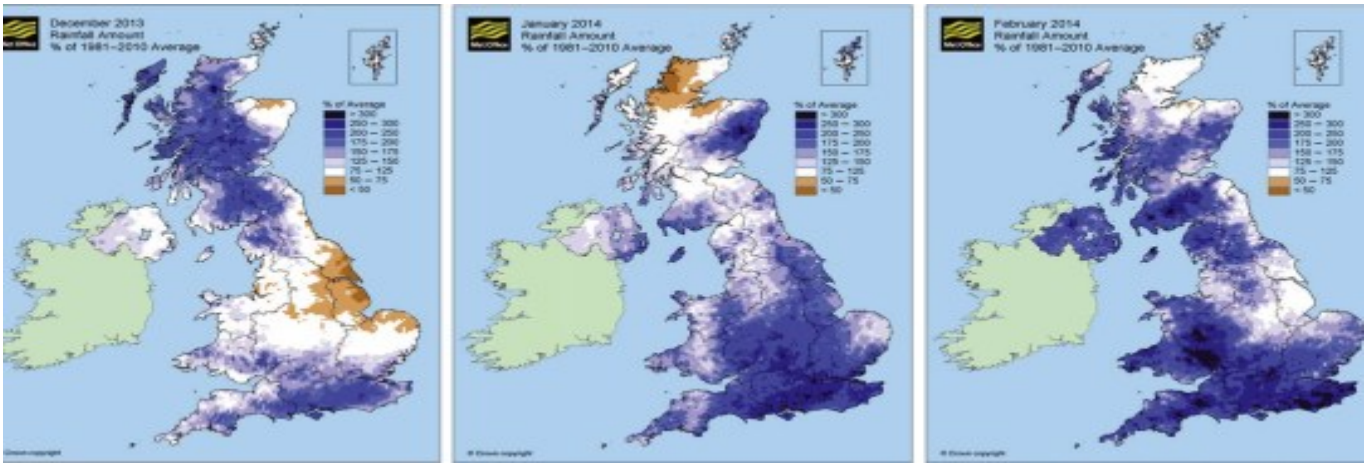
The series of storms resulted in the wettest winter in almost 250 years (according to the England and Wales precipitation series from 1766), significantly wetter than the previous wettest winter in 1914/1915.



Snapshot of UK rain radar surface rainfall rate for 2200 GMT on 23 December 2013

The extreme weather caused widespread flooding throughout Southern England and coastal damage – most notably in the South West and Norfolk coasts. The impact of the severe winter storms on individuals, businesses and the government were substantial, including several fatalities, widespread power cuts and damaged infrastructure.

Recent advances in forecasting, technology and the scientific developments in meteorology have been considerable. These developments and improvements in accuracy mean that a four-day weather forecast is as accurate as a one-day forecast was just thirty years ago. During the course of last winter, the Met Office was able to use these forecasts to warn of any severe weather well in advance. In the case of the St Jude's Day storm at the end of October 2013 warnings went out to the Government and the public five days before the storm even existed.



As the accuracy of weather forecasts has evolved, so has the communication of the potential impacts of severe weather. The National Severe Weather Warning Service enables more 'weather decisions' which in turn help to minimise the consequences of severe weather. The Met Office was at the heart of the government response to the storms, providing advice on weather impacts through the National Severe Weather Warning Service and Civil Contingency Advisors. The Met Office also worked very closely with both the national and regional media, who in turn played a key role in ensuring that the public were fully informed about the potential impacts of any up-coming weather.

In addition to the Public Weather Service, commercial partners and customers were also provided with

detailed updates throughout the period in order for them to plan effectively for logistical issues. Together, these advanced warnings helped authorities, businesses and individuals to be better prepared to take mitigating actions.

Driving further improvements in accuracy and therefore reducing the lead time and increasing the detail of severe weather warnings is one of the Met Office’s key priorities . The ultimate aim is to improve the potential for users to plan preventative measures for severe weather events much further ahead. Underpinning all of these developments is a continuing programme of scientific research and access to enhanced supercomputing over the next few years.

Date Created
February 2015

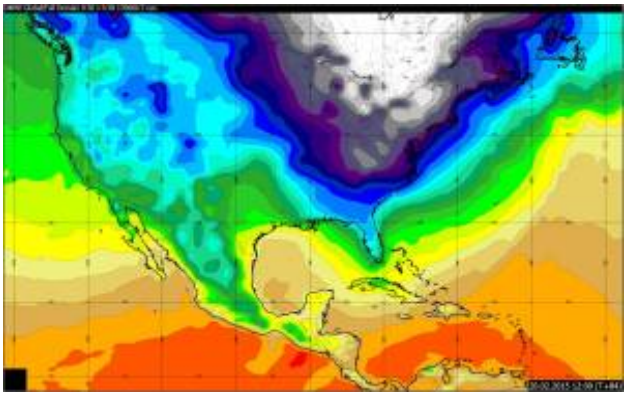
Stark weather contrasts across the USA

Description

While the UK continues to see fairly typical winter weather, over the other side of the Atlantic the US is experiencing some stark contrasts.

While some parts in the west are seeing warm and dry conditions, eastern areas are seeing very cold weather.

This week will see a continuation of warmer-than-average conditions in western parts of the USA, with little or no rainfall in the forecast.



Map showing air temperatures across the US, with white (-24C) and blue (below 0C) showing cold air and yellows and oranges showing warm air. From the Met Office's Global Model for 1200HRS GMT on 20 February 2015

Despite some welcome rainfall at the start of February, California remains in drought, with a large swathe in exceptional drought – which is the highest category that the US Drought Monitor report.

In San Francisco, no rain fell at the downtown observation station or the airport during the whole of January 2015. This is the first January without rainfall since records began in 1850. Normally January is the wettest month of the year, with an average 119mm.

The dry conditions have also resulted in the Sierra Nevada snow pack being at less than 50% of where it should be as we head towards the end of winter.

Meanwhile, the very cold spell of weather is expected to continue across a large part of eastern and northeastern USA, with air originating from the Arctic keeping things icy.

There will be some snow at times, although not as significant as some recent events, though localised heavy ‘lake effect’ snow is likely this week off the Great Lakes.

However, the most noteworthy element will be the extreme cold. Another arctic front will arrive across the East Coast, bringing exceptionally cold conditions.

Places from the Carolinas to the Mid-Atlantic may see some of the coldest weather since the mid-1990s, with numerous record low temperatures expected.

In fact this cold air is expected to reach as far south as Florida, with even the Caribbean expecting well below average temperatures throughout the rest of this week.

Date Created
February 2015

A very sunny winter on the cards

Description

Early figures show that while this winter is on track for fairly average temperatures and rainfall, it could be among the sunniest in our UK record dating back to 1929.

If we have average sunshine for the rest of February, it’s likely to be in the top few sunniest winters and could potentially beat the 2001 record of 189 hours.

Between 1 Dec -16 Feb many areas have already received more than their long-term average winter sunshine for the full season (1 Dec – 28 Feb), especially parts of the Midlands, eastern Scotland and north-east England.

December and January were both sunny across much of the country – especially eastern areas, while northern England and eastern Scotland have had a sunny February so far.

As we near the end of winter it looks as though temperatures will be close to the long-term average with December warmer than average, January near average and February so far being just below.

For many it has been a dry winter so far across southern, eastern and north-east England but relatively wet across Scotland, with the north-west having a wet December and January.

Dry start to February

The first half of February has seen some dry settled weather thanks to high pressure dominating the weather for much of the period.

Using figures from 1-16 February, temperatures have generally been around 1 to 1.5 °C below normal across the UK as a whole and clear skies have allowed fog and frosty conditions to develop at times.

Many areas have been on the dry side, with less than 20 percent of expected rainfall so far across large swathes of the country – we’d normally expect around half of the monthly average to have fallen by now.

Sunshine amounts have been variable but parts of northern England and eastern Scotland have already received almost the whole-month average.

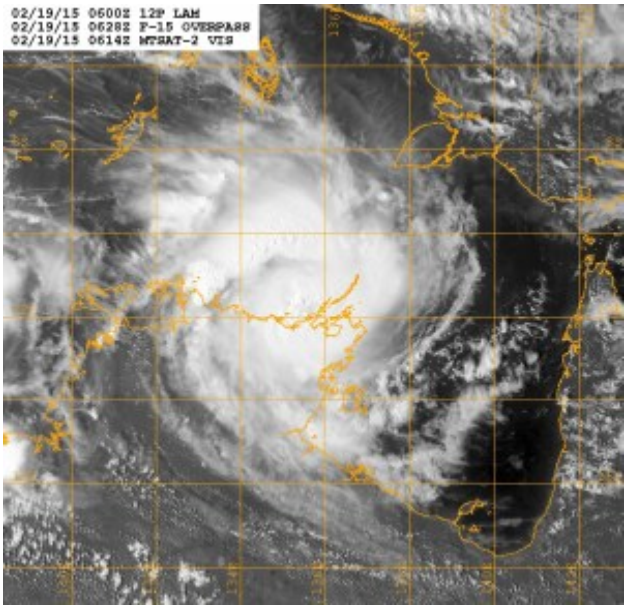
Date Created
February 2015

Two cyclones to hit Australia

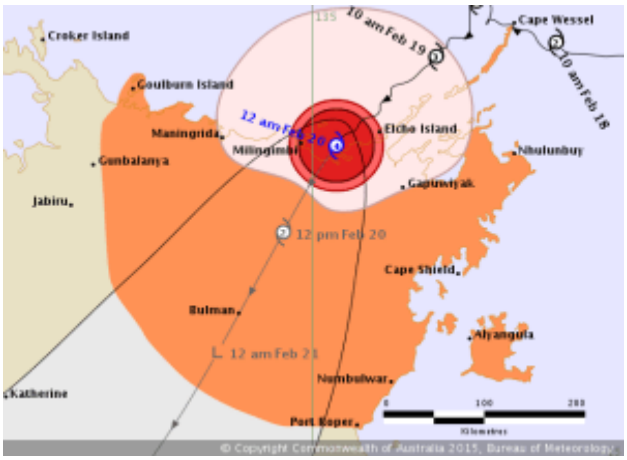
Description

Whilst here in the UK, we are coming towards the end of our winter season, Australia is coming towards the end of summer, but is in the middle of its cyclone season, and unusually there are currently two tropical cyclones affecting the country.

Severe Tropical Cyclone Lam is currently to the north of Australia's Northern Territory, in the Arafura Sea. The storm is expected to make landfall on Thursday as a category 4 storm, between Milingimbi and Gapuwiyak. Huge rainfall figures are forecast, with 300 to 600mm daily, potentially adding up to more than 800mm in places throughout the storm event, with flooding likely inland, as well as coastal flooding and damaging winds. Residents close to the coast have been advised to be ready to move to shelter with emergency kit. However, as the area is not densely populated, significant impacts are not expected. The nearest large population centre is Darwin, and although it is likely that there will be some wet and windy weather here, it is not expected to be anything that Darwinians aren't used to.

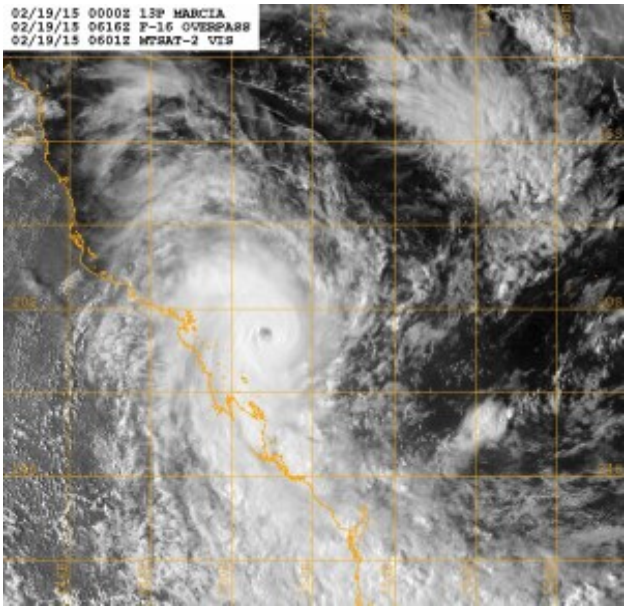


Credit: Courtesy of the Naval Research Laboratory

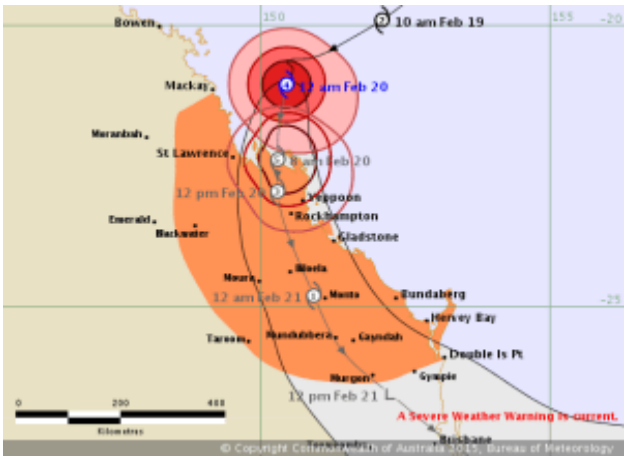


Storm track and warning areas for Tropical Cyclone Lam

Meanwhile, Severe Tropical Cyclone Marcia is heading towards the Queensland coast, and is expected to make landfall between Mackay and Gladstone on Thursday night as an extremely powerful category 5 storm. The Australian Bureau of Meteorology are forecasting Marcia to track inland for a while and quickly weaken, before turning parallel with the coast, which keeps the main risk area to the north of Brisbane. However, there is some uncertainty with the exact track of the storm, and if it were to remain closer to the coast, Brisbane could be in line for a significant amount of rainfall, potentially as much as 400mm. Destructive winds are likely around the coast and abnormally high tides will be experienced with water levels expected to rise above the highest tide of the year. Dangerous storm tides are forecast as the cyclone crosses the coast, as well as treacherous surf on exposed beaches.



Credit: Courtesy of the Naval Research Laboratory



Storm track and warning areas for Tropical Cyclone Marcia

Met Office StormTracker provides a mapped picture of tropical cyclones around the globe with access to track history and six-day forecast tracks for current tropical cyclones from the Met Office global forecast model and latest observed cloud cover and sea surface temperature. We also provide updates on current tropical storms via @metofficestorms on Twitter.

Date Created
February 2015

‘Super tides’, the weather and coastal flood risk

Description

UPDATED 27/02/2015 – this blog has been updated under the section ‘So what are ‘super tides” with the help of the National Oceanography Centre.

In this joint blog from the Environment Agency and the Met Office, we look at the issue of so-called ‘super tides’.

There has been a lot of media coverage about the potential impact of so-called ‘super tides’ which are due from today (Friday, 20 February) through to Monday.

So what are ‘super tides’?

Tides are governed by the gravitational pull of the moon and, to a lesser extent, the sun. Because the sun and moon go through different alignment, this affects the size of the tides.

When the gravitational pull of the sun and moon combine, we see larger than average tides – known as spring tides. When the gravitational pulls offset each other, we get smaller tides known as neap tides. We see two periods of spring and neap tides roughly every month.

Yet some spring tides are higher than others. This is because tidal forces are stengthened if the moon is closest to Earth in its elliptical orbit (astronomers call this perigee). Tide forces are also enhanced when the sun and the moon are directly over the equater. For ths Sun this happens on or around 21 March or September (the equinoxes). Spring tides are always higher at this time of year. The moon’s orbit also takes it above and below the equator over a period of 27.2 days. Just as with the Sun, the tide generating forces are at their greatest when the moon is directly overhead at the equator.

Very large spring tides occur when these astronomical factors coincide. Approximately every 4.5 years the moon is closest to the Earth, and is also overhead at the equator, at either the March or September equinox.

In some places, these extreme tidal conditions can cause water levels to be 0.5m higher than a normal spring tide, but the weather can have a greater impact than even these largest of tides

What is the role of the weather in sea levels?

It’s important to realise that just because we are expecting big astronomical tides over the next few days, these won’t cause the highest sea levels we’ve seen – even in the last few years. That’s because the weather can have a much bigger impact on sea level than the 18-year tidal cycle.

Strong winds can pile up water on coastlines, and low pressure systems can also cause a localised rise in sea level. Typically the difference in water level caused by the weather can be between 20 and 30cm, but it can be much bigger.

On the 5th December 2013, for example, the weather created a storm surge that increased the water level by up to 2 metres. Although an estimated 2,800 properties flooded, more than 800,000 properties were protected from flooding thanks to more than 2,800 kilometres of flood schemes. The Environment Agency also provided 160,000 warnings to homes and businesses to give people vital time to prepare.

This highlights the importance of the Met Office and the Environment Agency working together to look at the combined impact of astronomical tides, wind, low pressure and waves on flood schemes to assess the potential impacts for communities around our coast.

Will we see coastal flooding this weekend?

Given the height of the tides there may be some localised flooding. Weather isn't playing a large part in water levels over the next few days, although strong winds on Monday are likely to generate some large waves and push up sea levels slightly. This is nothing unusual for winter. You can see more about what weather to expect with the Met Office's forecasts and severe weather warnings.

The Environment Agency and the Met Office are working together to closely monitor the situation, and the Environment Agency will issue flood alerts and warnings as required.

In the Humber Estuary, for example, we are expecting total water levels of between 4.20-4.39 metres – well below record levels of 5.22m.

John Curtin, *Environment Agency's Director of Incident Management and Resilience,* said: "We are monitoring the situation closely with the Met Office and will issue flood alerts and warnings as required.

"It's possible we could see some large waves and spray and urge people to take care near coastal paths and promenades and not to drive through flood water.

"However, we can only get a warning to you if you've signed up to our free service. People can also see their flood risk and keep up to date with the latest situation on the GOV.UK website at https://www.gov.uk/check-if-youre-at-risk-of-flooding or follow @EnvAgency and #floodaware on Twitter for the latest flood updates."

For those in Scotland, you can see flood updates for your area on the SEPA website here.

For those in Wales, you can see flood updates in English and Welsh on the Natural Resources Wales website here.

You can also see John explaining the Environment Agency's flood warnings here:

Date Created
February 2015

Holiday Dust

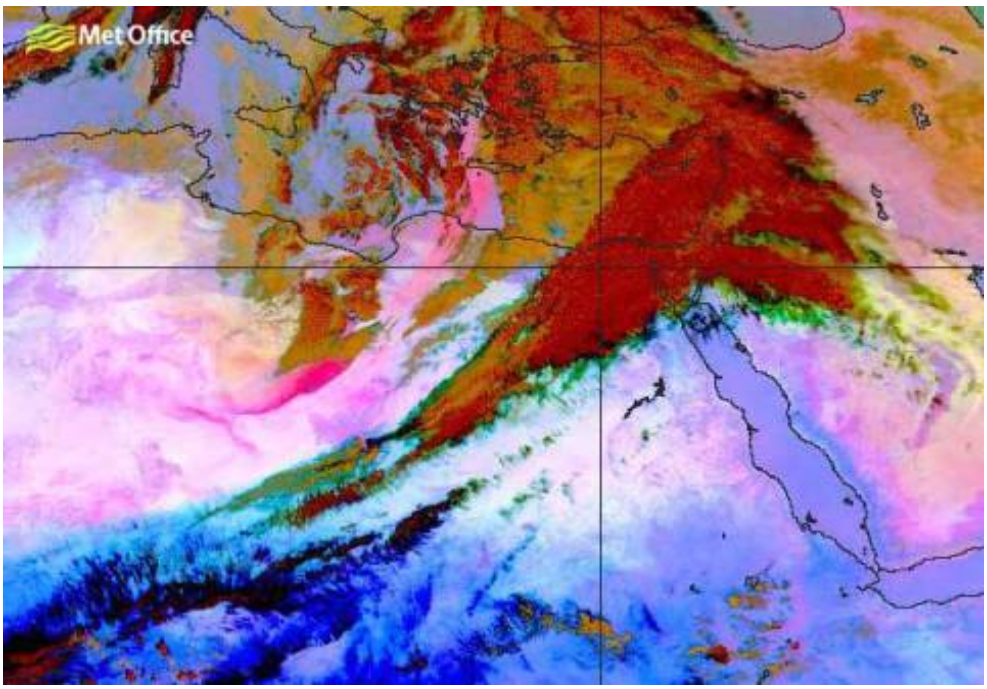
Description

At this time of year, many of us are in search of some winter sun, and a popular destination for Brits abroad is Egypt.

Typical conditions in Cairo at this time of year are fairly warm, dry and sunny. On average in February you could expect to see daytime highs of 21C, 8 hours of sunshine per day, and 1 wet day in the whole month. However, there may be some disappointed holidaymakers at the moment, as rather than sunshine; there is dust in the forecast. A dense dust plume has been developing across Libya and Egypt and will continue to grow over the coming days.

A deep area of low pressure in the central Mediterranean has given some very unsettled weather over recent days, and will continue to bring heavy rain and snow to northern parts of Algeria, Tunisia and perhaps western parts of Libya over the next few days. Very strong winds around the low will generate dust storms and sand storms and these will move across the rest of Libya and into Egypt during the first part of this week.

The dust storms will be severe and widespread enough to cause some disruption to air travel in the region, with perhaps some public health issues also.



The deep pink area in this satellite picture is the dust, and the line of dust stretches right up towards Greece.

These intense dust storms are often called Haboobs, which were first named in Saharan Sudan. They

are frequently associated with thunderstorms or even small tornadoes, and usually last about three hours. The storms tend to develop late in the day during summer, and are sometime followed by rain. They can transport and deposit huge quantities of sand or dust, moving as an extremely dense wall that can be up to 100 km wide and several kilometers high.

For more information about the weather abroad, visit our holiday weather section.

Date Created
February 2015